Form 2

Technology Information	
Area	1
Title	Accumulation of Contaminated Water
Submitted by	Fluor Federal Services, Inc.

1. Overview of Technologies (features, specification, functions, owners, etc.)

Proposed technologies and approaches to meet the requirements for tank improvements:

- Improved tank systems with containment and leak detection systems and extraction ports; consider dual wall underground tanks
- Lining systems
- In-situ horizontal barriers with leak detection systems and extraction ports to remove leaked water

Proposed technologies and approaches to meet the requirements for alternate storage options:

- Surface impoundments
- Reinjection loop of treated water to direct groundwater flow paths and permit decay
- Freezing or grouting below ground voids to eliminate water influx and reduce storage volume

Proposed techniques and approaches for detection of minor leaks:

- Real-time water level measurement devices in tanks; alarms to indicate water level changes
- Lysimeters around tanks
- Sorbants used around tanks instead of hardscape

Proposed technologies and approaches for facilitating removal of the bolted type of tanks:

- Fixatives versus decontamination techniques to limit worker exposure and creation of waste products
- Cut up tanks in place, using open air technique pioneered by Fluor at Hanford

2. Notes (Please provide following information if possible.)

- Technology readiness level (including cases of application, not limited to nuclear industry, time line for application)
  - Fluor used fixatives to control airborne contamination spread during the first open-air demolition of a plutonium-contaminated facility; fixatives included water mist, a product to convert rust to black magnetite, and acrylic paint.
  - Fluor commonly uses surface impoundments in nuclear and non-nuclear settings
- Challenges
  - Unknown tank water makeup
  - Availability of space at the site
- Others (referential information on patent if any)